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From:
TABLET
Faculty of Medicine
University of Toronto
Toronto, Ont. M5S 1A8

A Commitment to Education

When I became Dean six years ago, it was apparent that the primary need of the Faculty at that point was to strengthen our research activities. We have had appreciable success in this respect and we must continue to develop investigative potential in priority areas, to recruit outstanding scientists, and to monitor our research quality.

... It has been noticeable that while our research is often praised our education programs rarely receive such high accolades, and some are sharply criticized.

However, research is not our only priority. In June, representatives of all of our 27 departments attended a day-long conference on education. While the focus was on the undergraduate medical program, the issues discussed are relevant to all our educational programs. Over the past several years as department after department has been reviewed, it has been noticeable that while our research is often praised our education programs rarely receive such high accolades, and some are sharply criticized. Not all our graduate programs enjoy A-level accreditation. The Curriculum Renewal report on the undergraduate medical program identified a number of major problems. Some of those have not yet been tackled. The recent Hospital Amalgamation Education Report identified further problems with respect to clinical teaching. My own assessment is that our education programs are for the most part adequate, but some are stagnant. They lack excitement and innovation. Judging by comments I have received from members of the Faculty, I think we do have important problems to address in relation to our education programs.

Re-evaluate Priorities

The transition of the traditional university to today's multiversity, and of the traditional medical school to today's health science complex, have been marked by a relative loss of priority of fundamental educational goals and standards. We must remember that without undergraduate education programs we would not be a University, and our part of the social contract would not be met. Higher priority for the undergraduate medical program is appropriate because educating physicians is the fundamental (though not the only) reason our Faculty exists. As such, its quality must be outstanding.

The time has come for us to give increased attention to our education programs and to move them forward as we have our research efforts. We should have the same expectations of national and international leadership and excellence in education as in research. High standards and aspirations, focused programs, concerted planning and targetted funding will be needed.

Educational programs should be innovative, at the cutting edge of science, provide intellectual challenge and rewards. Education should not be something to be survived by teacher and student. A widespread opinion in the Faculty is that a lack of tangible rewards for teaching, such as promotion, is the reason why teaching receives less attention. While this may well be a factor, I suspect that, as well, the intellectual reward has gone from teaching because we have let some of our programs stagnate. Much of our medical curriculum has remained unchanged for 15 years.

Revamp Admission Requirements

Our admission requirements need to be changed to reflect better the goals of our curriculum and the aspirations of our Faculty. The Medical Admissions Task Force that I established last year will report in the fall; major changes encouraging greater breadth and depth in incoming students will likely be recommended. I expect we will look for students who have previously demonstrated capability in research and other independent scholarly work and more students with a broad educational background. We should attempt to recruit the very top students from across Canada, not only Ontario. This applies to many of our graduate programs as well.

The educational environment of our medical curriculum is not intellectually challenging enough and our curriculum does not fully reflect our stated objectives nor our strengths. We often concentrate attention on superficial administrative matters (eg. number of course hours) rather than fundamental medical education issues. For example, the large number of lectures and numerous seminars (which often really are small didactic sessions), and the large syllabi we now offer, suggest we believe that transmission of the facts known in 1986 is sufficient to produce the physician, the researcher, the leader. Surely an intellectually exciting and challenging environment which encourages thinking, problem solving and scholarly activity looks and feels different from what we now offer. Positive comments from first year students about the innovations recently introduced — the new anatomy program, the core selectives, and the two new community health courses — suggest that these students want to be challenged by problems and issues, not only the rote learning of facts.

... our medical curriculum is not intellectually challenging enough and our curriculum does not fully reflect our stated objectives or strengths.

Our educational objectives are quite clear. To achieve them I believe we should set for ourselves the goal of restructuring 50 percent of our currently scheduled lecture and seminar time in the medical curriculum in order to allow time for educational experiences that encourage students to think in depth about problems and to work more closely with individual faculty. In this respect we should recall that our Faculty's strengths include excellent research and diversity of opportunity which should fit well with the remarkably different backgrounds of our entering students. Our undergraduate medical programs must better exploit this combination.

More Emphasis on Research

For example, our world class, research-based groups on the campus and in the hospital research institutes should be more available for the education of medical students. These groups are among our special strengths and involvement by our medical students should be exciting and challenging for the scientists.

Our health science complex is now of such a size as to produce problems in morale, communication, planning and productivity from time to time. While reducing student numbers will not in itself solve these problems, it could help. Also we need to consider more effective and more decentralized planning and management units. Placing more responsibility at the level of the teaching hospitals and the departments may have merit. Department chairmen are responsible and accountable for the leadership, planning and quality of their education programs. Therefore, it is important to consider educational interest and skills in our recruitment, not only for chairmen but all appointments, as well as promotion recommendations, job descriptions and annual reviews. Educational issues need to be discussed more regularly at the chairmen's meeting. Our Faculty complement plans must take into account both our educational and research obligations. Fortunately, this can usually be done without compromising excellence in either area.

To address these problems, I have taken the following steps. I have established a Faculty Education Committee chaired by Dr. E.M.

Sellers, Associate Dean, Academic Affairs, that will be analogous to the Faculty Research Committee. It will have the responsibility to help the Faculty address the broad priority and policy issues in education. I will ask this committee to initiate the

from the dean

planning and implementation of seven specific Faculty initiatives in the 1986/87 academic year:

- to address weaknesses in our undergraduate medical program;
- to develop comprehensive Course and Program Evaluation, which will encourage ongoing critical review, improvement and innovation;
- to develop a Faculty program to help departments assess teacher effectiveness and to help individuals in the documentation of their teaching contributions for purposes of promotion;
- to analyse the academic merit and the feasibility of expanding computer assisted instruction and medical informatics in the Faculty, via a task force chaired by Dr. W.C. Tatton;
- to establish a Faculty Career Development Program in Education;
- to develop education research programs in conjunction with the Division of Studies in Medical Education and the Faculty Research Committee; and
- to produce a 5-year academic plan for the Division of Teaching Laboratories.

These initiatives will require funding and I intend to ensure that appropriate support is found. Several steps can be taken now. Others will take some time to put in place. A professional educator/planner will be hired shortly to support the Faculty Education Committee, the Undergraduate Medical Curriculum Committee and department planning groups.

Funding for New Initiatives

In addition, I propose finding discretionary funds for the academic affairs portfolio to support planning, piloting, implementation and evaluation of innovative educational initiatives. In particular, these funds will be given preferentially to support innovations which destructure the existing heavily didactic teaching program; encourage research and independent scholarly activity in education; support the medical scholars concept; take advantage of the educational potential of our diversity and research strengths; and develop innovative uses of laboratories.

With respect to the longer term, we will attempt to find new funds to support education program development and to link our budget planning to both education and research program priorities. Specifically, we need to find ways to reward departmental initiatives in education.

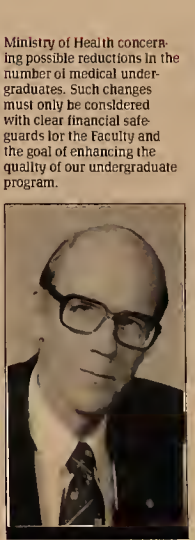
Working with the Hospitals

Some other initiatives have also been taken which will help us to achieve our educational goals. An Undergraduate Medical Education Planning Task Force has been established conjointly by the merging of Toronto General Hospital and Toronto Western Hospital, and the Faculty. It is intended to help us take advantage of the education implications of this merger and to come to grips with important problems of clinical teaching such as case mix, patient numbers and institutional role differentiation. The Faculty's effort in clinical education needs to be much more effective, not only with respect to the hospital mergers under consideration but in the other teaching hospitals as well.

... look for students who have previously demonstrated capability in research and other independent scholarly work ...

I have asked the Chairmen of the Departments of Medicine and Surgery to come forward with a joint proposal to the Undergraduate Medical Education Committee for a revision of our system's teaching to increase their Department's responsibilities in this position of the curriculum.

I will be undertaking exploratory discussions in the University and with the Ministry of Health concerning possible reductions in the number of medical undergraduates. Such changes must only be considered with clear financial safeguards for the Faculty and the goal of enhancing the quality of our undergraduate program.



Dr. Ross Fleming, *newly appointed Assistant Dean — Undergraduate Medical Education, will be addressing the need to involve the Hospital Coordinators to a far greater extent in decisions about the curriculum. Their responsibilities and accountability to local hospital departments and the University chairmen requires clarification.*

I believe that these steps have reaffirmed the Faculty's commitment to raise our standards and expectations in the undergraduate medical program. We have a similar commitment to our educational programs in the allied health professions, to our postgraduate medical programs and to master's and doctoral programs for which we share responsibility with the School of Graduate Studies.

Frederick H. Lowy

tablet

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Editorial Advisors: Dr. K. Moore
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The Clarke Celebrates 20th Year as Leading Canadian Institute

"Nowhere else in Canada is there a psychiatric institute with this number of people, this degree of expertise, this mandate to pursue knowledge ..."

Dr. Vivian Rakoff, Director and Psychiatrist-in-Chief The Clarke Institute of Psychiatry

As anniversary celebrations go, The Clarke Institute of Psychiatry is to be commended. A new logo; a two-day birthday celebration complete with guest speakers; a public education program call States of Mind co-sponsored with the Ontario Science Centre; and a highly successful Researeh Day with 300 Faculty investigators participating, all served to make The Clarke's 20th memorable.

The Clarke's unique mandate is largely responsible for its success. Operating independently from the Ontario psychiatric hospital system, the facility has become a leader in research and education in the mental health field.

Dr. Edward Turner, Professor of Forensic Psychiatry and Director and Psychiatrist-in-Chief of the Metropolitan Toronto Forensic Service, has been on The Clarke staff since the institute was founded. Dr. Turner believes The Clarke's success can be directly linked to the special autonomy it was given from the start.

"Dr. Dymond, then Minister of Health, was an enlightened man who saw the merits of having an institute responsible to a board of trustees and not directly to the government," says Dr. Turner.

"And I believe over the years his wisdom has been proven. It (the board) has kept us at arm's length from government directives and with moderately generous funding, The Clarke has been able to develop imaginative programs."

The Clarke's 'founding flexibility' extended to its very foundations. Despite what Dr. Turner calls "sympathy and empathy" for the psychiatrically disabled 20 years ago, facilities at the Toronto Psychiatric Hospital (built in 1926) were greatly outdated. The new Clarke building on College Street was built in such a way that — apart from the shell and inner elevator areas and ductwork — the floors could be continually modified.

"It was important that as we developed new ideas for managing patients and doing researeh, we could adapt the actual structure of the building," he explains.

The facility opened in an era of social upheaval and increased emphasis on understanding mental health. In its first year, 720 patients were admitted and more than 30,000 out-patient visits were recorded. It was also at this point that formal teaching programs in psychiatry and mental health were implemented with the Faculty of Medicine.

Importance of Community Involvement

The Clarke's essential dedication to research and study has been tempered, however, by a different kind of social responsiveness. Physically and philosophically, The Clarke has remained close to the population it serves.

"We're still a clinical institute primarily, we see a lot of patients. Most of our research grows out of our commitment to the treatment of patients," says Dr. Vivian Rakoff, Director and Psychiatrist-in-Chief of The Clarke. "So while there is researeh going on, based on the patterns of science, the bulk of it is related to real people."

Applications of Clarke Institute researeh have reduced the average in-patient stay by as much as 50 percent over the past two decades. More effective socialization techniques, medication and emphasis on rehabilitation have contributed to this reduction.

... The Clarke's success can be directly linked to the special autonomy it was given from the start.

Examples of The Clarke's involvement in the community include programs which clearly reflect changing social need. The Clarke's speech therapy program for stutterers is internationally reknowned. The Relatives and Friends of Schizophrenics, developed by the Active Treatment Clinic, has also won awards for its innovative approach to support groups. The model support group, Community Contacts for the Widowed, has been adapted worldwide. The Survivor Support Program for those with a family member who commited suicide and the Hook Fong Mental Health Service a community service for South-East Asians are excellent illustrations of The Clarke's commitment to the community.

Major Advances in Psychiatric Research

One of The Clarke's great advances in recent years has been in psychopharmacology studies. Dr. Emmanuel Persad, The Clarke's Researeh Co-ordinator and Chief of the Clinical Psychopharmacology Unit, says researchers are looking at the effectiveness of various medications, such as anti-depressants, on different psychiatric disorders. Research is also exploring how drug dosages might be influenced by factors such as cultural or racial backgrounds.

"It's well known that Mongolian races metabolize drugs differently from Caucasian races, so it's an important area of research," explains Dr. Persad.

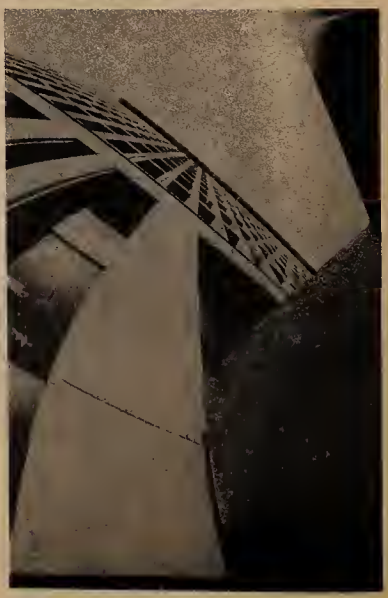
Also under study is the use of drugs in dealing with violent sexual offenders, referred to as "chemical castration." As well, Dr. Persad's unit investigates new drugs, initially on animals and when proven, on patients.

For the future the building of a recombinant DNA lab is planned.

"So far most researeh looking at the effect of drugs has been focussed on the measurement of body fluids or behavior drugs produce," says Dr. Persad. "Using techniques of recombinant DNA, we will attempt to see how drugs actually work at the cellular level and also the differences that cells go through in various psychiatric conditions."

It is also hoped The Clarke will in due course obtain a Positron Emission Tomograph (PET) scanner, which can help diagnose Alzheimer's Disease and psychiat-

Physically and philosophically, The Clarke has remained close to the population it serves.



ric conditions such as schizophrenia and affective (mood) disorders. PET scanners will be used to measure areas of metabolic activity in the brain and produce color-coded maps of brain activity.

Dr. Persad explains that ongoing studies in the area of biological psychiatry have made a major impact, particularly in relation to the genetics of affective disorders. Led by Dr. Harvey Stancer, a group from the Affective Disorders Unit was responsible for work that attracted international attention a few years ago. Results of the group's study (phase two is currently underway) suggested that there is a specific genetic factor responsible for transmission of affective disorders.

"People have known for a long time that mood disorders tend to run in families, but not until this study had they been able to specify how," describes Dr. Persad.

The Clarke has also made advances in areas such as sexology (largest concentration of sexology research in Canada), gerontology, child development (including autism), psychosomatics, psychiatric therapies in general and cognitive therapy in particular, bereavement, eating disorders and sleep research.

The early work of Dr. Oleh Hornykiewicz, Head of The Clarke's Human Brain Lab, led to the development of L-dopa, still the primary treatment of Parkinson's Disease. His current work in the area of dementias suggests a connection with environmental substances.

City as Research Material

Dr. Rakoff identifies Toronto, itself, as The Clarke's multicultural lab for transcultural studies, which is the psychiatry of adaption and migration. This area has become more important as immigration and east-west migration in Canada increases.

"It's really detective work and it is rather interesting."

The Clarke's Metropolitan Toronto Forensic Service (METFORS) is an extremely busy centre that provides psychiatric assessments of people before the courts; psychotherapy treatment of in-patients admitted for longer-term assessments (not more than 30 days); and advice on mental health legislation and the Criminal Code as it relates to mental health.

Staff psychiatrists take turns on the Lieutentant Governor's Board of Review, which gives yearly reviews of patients who have been found unfit to stand trial or not guilty by reason of insanity.

METFORS also makes a valuable contribution with its Family Court Clinic at 950 Yonge Street, which provides clinical services to the Toronto Provincial Court (Family Division). Cases involving young offenders, custody and access disputes, and child welfare matters are referred there for assessment and treatment.

METFORS is a teaching centre as well as a research facility. Current research projects (both clinical and theoretical) are investigating the insanity defence, fitness to stand trial, malingering (attempts to fake symptoms) and how psychiatry is delivered to the justice system. METFORS staff act as consultants for other facilities and on occasion, as psychiatric detectives in civil cases when a will is contested. Determining if the deceased was of sound mind at the time they made their will can be tricky, says Dr. Turner, head of METFORS.

"We just have to go by whatever information we can get from relatives, from previous psychiatric care they may have had — and often do — and even information from the lawyer who presided over the writing of the will," says Dr. Turner. "It's really detective work and it is rather interesting."

Role in Education

Another major item on The Clarke's Institute's agenda is education. As a teaching hospital of the University of Toronto, The Clarke provides specialized clinical training for psychiatric residents (currently there are 37) enrolled in the Faculty of Medicine. The Director of the Institute is the Chairman of the Department of Psychiatry. Students in other disciplines — nursing, pharmacy, occupational therapy and child care — are all offered training opportunities at The Clarke. Continuing education for community mental and health care practitioners is also provided, as are education events for the general public.

Whether it's research, education or clinical studies, everything at The Clarke is ultimately aimed at better patient care — organized into emergency, out-patient and in-patient sections. With a total of 139 beds, The Clarke had just over 1,000 in-patient admissions during the 1984-85 fiscal year, with an average stay of 23 days each. The Clarke also saw more than 7,800 out-patients during that period.

... everything at The Clarke is ultimately aimed at better patient care ...

Recently described by Ontario Health Minister Murray Elston as "a national resource and pioneer in the treatment of mental disorders," The Clarke is not content to rest on its laurels. Over the next few years, the Institute will focus on reorganizing and streamlining its resources and services in order to preserve its leadership role in psychiatry.

However Dr. Rakoff does believe the provincial government can learn a few lessons from The Clarke and apply them to other Ontario psychiatric hospitals by "granting more autonomy to administrators and professional staff, emphasizing back-up in the community and, I hope, by rewarding excellence." ■

Underfunding: Nemesis of the Eighties, Legacy of the Nineties?

In the following interview, Jim Kraemer, Chief Administrative Officer in the Faculty of Medicine, puts the issues surrounding successive budget cuts into perspective. His observations on the impact of underfunding should be of interest to all connected to the Faculty, as everyone is affected.

What exactly does the Faculty of Medicine mean when it uses the term "underfunded" to describe the current budget situation?

"It has to be accepted that the word 'underfunding' was coined by the Universities to describe their current financial situation. It's a term that reflects a disparity in the amount of funding we receive from government relative to what we think society expects of us. In the absence of those expectations being rigorously defined, what we perceive as our mandate cannot be achieved with the current level of funding.

As we understand it, there is an expectation on the part of students and their parents that they will be educated to a certain level. There is an expectation on the part of the community that it can receive a certain level of care when approaching the health care system. And, there is a general expectation that we can advance frontiers of knowledge to a significant degree and improve life in general.

The reality is that we cannot meet all of those expectations to the extent and to the degree we think we should with the resources we are provided with. In the absence of someone redefining those expectations, we lack the wherewithal to achieve what we want to do.

"Underfunding" is a rather self-serving term that has allowed Universities to point to government as the source of their problems — and the solution. The reality of course is that the Universities also share in the responsibility for a redefinition of expectations and role. Recently we have begun to see some beginnings of a movement in this direction — long overdue.

As a public institution, the University has to depend on public monies. The public economy over the past few years has been unable to sustain the level of financial support we have come to expect. The province has had to contend with general economic problems which were probably more severe than what the universities have had to face. Those problems have taken a greater command of resources. For that very reason, 'underfunding' will be with us for a long time and we will need to manage it more rigourously than we have so far."

Has the University assigned disportionotely lorge budget cuts to the Faculty of Medicine?

"There's a degree of envy from the rest of the university and a degree of disbeliel when the Faculty of Medicine starts talking poor. That reflects our access to other resources in the hospital and clinical sectors. Our access to these resources, which may include dollars and certainly includes staff and physical resources, definitely gives us an edge. In addition, we have taken initiatives on our own that other parts of the University have not, and they have paid olf.

When we were receiving disproportionate reductions in the late 70's, our leeling was that we were being penalized for our initiatives and access to other resources. I do think that there has been more recognition lrom within the University that that is not what should happen.

Now, rather than singling out Medicine, the Central Administration tends to assign an average reduction to the three largest Faculties (Arts and Science, Engineering and Medicine) and let the discretionary reductions happen within. Even a fraction of a percentage reduction in the budget assigned to Arts and Science or Medicine can be quite a substantial amount of money. It is then up to the Dean to assign discretionary reductions. We, in turn, when we approach large departments like Medicine or Surgery, have to depend on the Chairmen or Chiefs ol Divisions to decide which divisions will receive the discretionary cuts."

> *"... what we perceive as our mandate cannot be achieved with the current level of funding."*

Whot effect hos underfunding hod on teoching programs?

"The effects on teaching are many-fold. For instance, we have not been able to replace teaching staff at the rate they have departed. We have not been able to make substantial investments in education from a developmental point of view. We are using outdated equipment, which is often in a state of disrepair. Physical plant and equipment are the areas that most quickly erode when a public sector organization is faced with money problems.

There is a burden on people which detracts lrom the things they would preler or should be doing. Fewer people doing more is not a healthy environment for effective teaching, especially in a professional school where one places a great deal of emphasis on small group bedside teaching.

We have had to reduce the number of Teaching Assistant positions. This means academic staff are doing work that in the past might have been done by T.A.'s. That is not terribly cost-effective.

Another area where the effects make an impact is the demands and expectations the Faculty and community have on our academic staff. They do have to commit themselves to research or other aspects of prolessional achievement, if they wish to excel. Teaching more, marking more papers, handling more labs, all impede that. There is not much incentive to look at new methods of instruction or for our teachers to look at new teaching technologies.

Even if they did learn them, our ability to afford them is severely constrained. So the effect probably shows in less innovative approaches to teaching than one might expect in a medical school or prolessional teaching faculty. Probably many students would agree.

The computing age is passing us by. There is very little in our undergraduate curriculum concerning the information age. There are many teaching techniques which we approach very gingerly because learning, adapting and implementing them would be very consuming of time and effort that we do not have.

Meanwhile, what has not happened is a reduction in the number of students we are expected to teach. In fact, if one goes across the number of graduate, postgraduate, medical, Arts and Science and rehabilitation medicine students, we are probably teaching more with lewer resources. There have been glowing examples of innovation, yet there should be many more.

What effect has underfunding hod on research?

"To a large extent researchers are expected to do as much, if not more, with less. This drives people to spending a lot more time and energy in raising research funds, which is not an environment that fosters creativity.

Like the University, funding agencies also feel underfunded. Researchers approaching these agencies are bound to feel underfunded — that they have not been given enough resources to achieve what they feel is expected of them.

The demands on the research dollar, once it hits the University, have grown. It is not a static situation. In a sense the research dollar is under assault not only lrom government and the public's preparedness to put up money lor research, but once the money hits the Univer-

sity because of the University's general problems, it is under assault there as well.

The problems we face are that there are demands on researchers' time that have little to do with science. If one looks to other centres where the demands are not that extensive, one can see that there is a competitive advantage in the research department or institute as compared with the more traditional university department.

Probably the most widely discussed area within the Faculty of Medicine is the cost of the infrastructure supporting research. While services from the Division of Laboratory Animal Services and other service divisions are still subsidized, the subsidies have been reduced over the years. The effect being that the cost of those services is borne ever increasingly by research budgets and by departments."

Where does the Faculty find alternative funding? Are there other places it can look to?

"The options are not many. Essentially, the less tangible options are expecting our people and facilities to carry more of a burden, in effect the University carries a chunk of its deficit on the back of not keeping up its physical plant; on the back of not replacing equipment; and increasingly, it is carrying more and more of its deficit on the back of people who are doing more and more work. That is not a solution, it is just how we have been coping.

One solution is to look to other sources of funds. The medical school over the years has looked (with tremendous advantage) to the resources — physical and fiscal — that are available through the health care and clinical sector. It is absolutely no secret that the entire medical school including non-clinical departments has been advantaged by our clinical teachers having accepted a commitment to depend on their clinical earnings to a large extent, and still make major contributions to our academic programs. Their preparedness to do that at a time when the University dollar was being cut, more so than the health care dollar, has been what sustained this medical school for the last decade.

That is not to suggest that the non-clinical departments have not suffered. However, they probably would have suffered a great deal more had we not had this income. In terms of the future, from what one hears from the heads of clinical departments, we have pretty well exhausted this avenue. While they will carry their share, we have strained loyalties and there is a sense that we have not reciprocated the commitment and the efforts of our clinical teachers.

The hospitals have their own problems, as do most public institutions, which may suggest our only alternative to government is to seek private funding. While we might like to be hopeful about that, we are only one of a number of public and voluntary institutions facing the situation and looking to the same pot. The source is not infinite.

Private funding — from individuals and corporations — is an avenue that we have not pursued to its fullest extent though there have been individual shining examples. I am not certain this would ever be a solution for our problems; but it would certainly make them more manageable. There would be implications or side-effects of course. We would need to be more sensitive to a new set of perhaps quite different expectations that such donors might have of us. For most part Universities and academics have avoided these expectations, but if we are going to depend on industry, for example, to support us, then we will have to be a bit more sensitive about what we can do that industry might be interested in and look to us for. The same holds true for alumni groups and private individuals.

If one moves away from private sources, there are not many options. One can hope for different and bigger slices of what is essentially the same pie —but an awful lot of people are waiting in line for pieces of that pie.

We can look to our own entrepreneurial efforts, which we have been doing more and more of in our service divisions. I think we have leapt way ahead of other parts of the University in this area. We have shown we can maintain an infrastructure of services which supports academic endeavours tremendously well and sustains itself by going out and selling the quality of its services. Service groups like instructional Media Services, Central Services and Technical Services now have a mandate to offer a broad array of quality services and to look for clients in the outside community. To the extent that they succeed in doing that, their and our reputation is enhanced. Their ability to deliver the kinds of services required by the academic community is also expanded by broadening the base of their activity.

However, I do not see this as a long term solution to future problems. It has been a significant help in the last decade. Had we not been able to count on those services expanding and charging reasonably realistically for what they do, our academic departments would have had to carry even larger budget reductions."

> ***"... there are demands on the researchers' time that have little to do with science."***

Are other Ontario and Canadian medical schools experiencing the same degree of difficulty?

"In varying degrees other Canadian and American schools have the same problems. There is not an agenda of a meeting that goes by where the issues of downsizing and underfunding do not come up. I think this is a fairly pervasive, long term problem. While there may be instances of a school with a significant endowment, or a province or state that has a resource advantage, in general the problem is very wide-spread.

The problem at this university may differ in degree however, if not in kind largely because of its excess of opportunity and ambition. The University of Toronto not only sees itself, but in fact is, the leading centre of learning in the country. It prides itself in breadth of scholarly activity and it endeavours, in increasing numbers of areas, to achieve excellence and world-class status.

The idea of settling for less is not at all attractive; not for the University of Toronto and not for its Faculty of Medicine. Given the size of this community and the medical school, one can find very few areas in medical science or clinical medicine or community health, where there is not a group of people within the discipline who with just that additional resource or proper leadership or commitment to priority from private funding, could become at least national in stature or even world-class.

The school's aspiration has been to strive for excellence and not to settle for second class. The base of this community in Metro Toronto offers the potential to achieve this in virtually every field. However, with the present funding situation we are being forced into a position of either having to settle for adequacy or to choose specific areas in which we will excell at the expense of other areas."

Has there been a detrimental effect on morale? How has this been manifested?

"The effects are manifested in ways that are difficult to deal with. For instance, a lack of enthusiasm to do new things or be innovative, lack of commitment to involve oneself in the affairs of the medical school. People feel beset upon and they have other things to do.

While some researchers are leaving, the numbers are not high because their departure would indicate they have been offered a better position elsewhere, which is unlikely. Some leave because we can not make a commitment to their careers.

The problem manifests itself in the stress felt by Department Chairmen and staff. It exhibits itself in people becoming more vocal and openly displaying their reluctance in going ahead with initiatives even though everyone agrees they are positive and necessary steps. The tendency is to retrench. People ask, "Should we be going ahead and trying something new, no matter how relative or cutting-edge, when we have all these other problems already?" Conversely of course, those in the new cutting-edge fields are frustrated by the apparent lack of tangible support and commitment from their colleagues.

It shows itself in people becoming more critical of their colleagues. It shows itself when scientists look at the hospital-based research institutes as threatening and not as opportunities to advance science. People become more protective and defensive. The whole aspect of sinking morale is occurring amongst teachers, chairmen and departments and cannot help but be conveyed to students and staff."

So, what does the future hold for the Faculty?

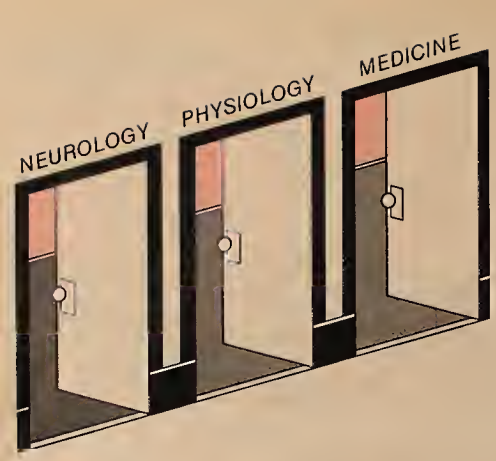
"The future holds much more selective and discretionary choices on where we will grow and where we will cut back. I see little option. Our deans and chairmen will have to be as concerned with what they are going to downsize, as they have been with which areas they hope to move toward excellence.

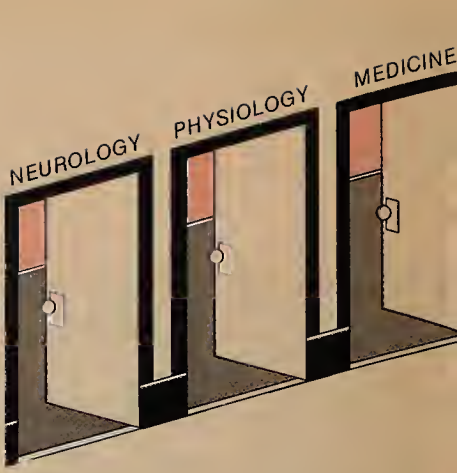
There will be a lot more in the way of hard choices. Not that the choices have not been difficult to this point. But in many instances we have avoided choosing by simply taking from where it was obvious that it could be taken with marginal hurt.

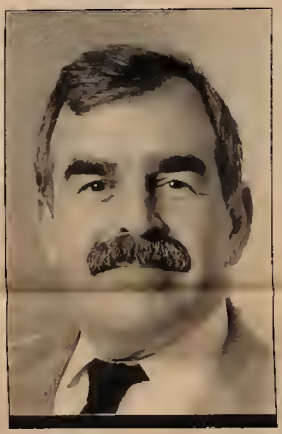
> ***"The school's aspiration has been to strive for excellence and never settle for second class."***

There will be a greater emphasis on initiatives that will attract support from the private sector — corporate, alumni and individuals. For some this will entail uncomfortable changes in attitude and perspective while for others it will be welcome and overdue opportunity for investing energy and effort. For all of us however, these initiatives and their success will be the critical factor in achieving excellence v/s sustaining adequacy.

Whether the situation will improve, opinions vary. There is a belief that the underfunding cannot continue. And, there is a wistful looking back to the 70s when our problems were quite different. I think both are fantasies. I see very little in the public sector, government or the overall economy which suggests that our prospects will change in the near future unless or until we adjust to the new reality."







Dr. Aubie Angel

Francis Bacon once wrote, "A man must make his opportunity, as often as find it."

While it may have been written in the abstract, expressions of Bacon's axiom are found throughout the Faculty of Medicine. One area in particular where opportunity abounds — for both the searcher and the lucky — is that of undergraduate medical student research.

From individual investigators inviting curious students into their laboratories, to the more formal department and research institute-sponsored summer scholarship, to the only major M.D./Ph.D. program in Canada, the Faculty is committed with both funding and personnel to offering undergraduate students the opportunity to research. What is probably most appealing to medical students is that the research experience can be as intense or cursory as desired.

Quite a few medical students have taken advantage of these programs. While the exact number cannot be calculated at this point, a task force, chaired by **Dr. Harvey Anderson**, Associate Dean-Research, is looking at ways of coordinating the various programs. The following article looks at two programs which are firmly established in the Faculty.

With that established the obvious question becomes, 'Why would an undergraduate student, whose ultimate goal is to become a physician, be interested in medical research?'

Future of Academic Medicine

According to **Dr. Aubie Angel**, Director of the Institute of Medical Science, several factors important to both the future of the students and to the future of the Faculty encouraged the Institute to develop both its undergraduate summer scholarship program and a longer program involving two summers as well as three years of elective and selective time. The second program involves six students in an intensive experience, during which they must make public presentations at scientific meetings.

The Institute of Medical Science, a division of the School of Graduate Studies, was created in 1968 to meet the expanded need for graduate training in clinically-related medical research. Both clinical and basic scientists are cross-appointed to the Institute.

Dr. Angel explains that several years ago the Institute became concerned about the future of academic medicine because fewer and fewer medical students were choosing to become scientists. This is borne out by statistics from the American Medical Association showing the number of physicians reporting research as their primary activity declined by 50 percent from 15,400 individuals in 1968 to only 7,900 in 1975. Another alarming statistic showed that in 1963, 49 percent of U.S. medical students assigned high priority to research. In 1976, the figure had dropped to two percent.

Dr. Angel believes that 10 to 20 percent of each medical class should see themselves as academic physicians participating in the renewal of medical schools. However, too often students' initial enthusiasm for exploring the unknown is quashed by the heavy curriculum. Eventually, the students' focus is narrowed to their role as practitioners.

"It is important for medical students to have the opportunity to be involved in research, rather than forcing them into it," Dr. Angel says. "Not all medical students want to pursue research as a life-long goal, but each of them should have the encouragement to become involved because medical research is fundamental to their future. Science is the foundation upon which medicine is built."

... too often students' initial enthusiasm for exploring the unknown is quashed ...

Recognizing this, in the late 1970s the Institute created its programs which enable students to have a taste of research over a limited period of time, without changing their original career objectives.

"Students are infected by other people's excitement and enthusiasm. The key is to identify Faculty members who enjoy having students in their labs and then to match them with students interested in their work," explains Dr. Angel. "It is through this blend that the spark of intellectual enthusiasm is kindled."

Structured Research Experience

The Institute tries to ensure that students have the best possible research experience; thus the programs are structured with set expectations on the behalf of the student and the researcher. In each project the student is given a specific problem to consider and then is responsible for designing an experiment that will answer the question.

"This is very different from the student coming into the lab at the beginning of the summer and being handed 1,000 vials of blood to measure for the next four months," describes Dr. Angel. "The student is not just another pair of hands." At the end of the project, the goal is for students to feel they have made a valuable contribution to a specific research project.

How effective is this approach? Taking the project of summer research student **Alexandra Mayo** as an example, it works well. Working in Dr. Ed Sellers' lab at the Addiction Research Foundation, she was given the problem of designing a quick screening model for looking at drug interaction at the site of excretion, in this case, the kidney. She explains that because many expensive drugs are excreted by the kidney, if another inhibitor drug can be administered at the same time, these two may interact to a degree that only the second drug will be excreted. This would extend the lifetime and usefulness of the first drug in the body.

Once given the problem, Alexandra began the process of going through articles which described similar projects. She had to ensure that her model used commonly devised methods and that her results duplicated what other researchers had found, but did it faster.

As she describes, "What we were doing was incubating a piece of tissue from rat kidney with a drug that was radioactively labeled. We

Student Research Opening Doors to the Future

then separated the incubation media and the tissue after a time to see how much of the drug had been taken into the tissue. We did this by counting the amount of radioactivity within the tissue and the media.

"I would get the uptake of the radio-labeled drug quite nicely, but could not get the inhibitors to work. I should have been able to introduce another drug, which as a competitor would inhibit or block the accumulation of the first drug in the kidney tissue. Thus, the second drug would be excreted and the first, radio-labeled drug should remain in the media."

After several weeks of trial and error, she discovered that introducing drugs suspended in alcohol killed the tissue. Once alcohol was eliminated, the model worked perfectly.

Summing up her summer's work she says she found it fascinating. "Up until this point, no one had ever given me this level of responsibility before, so it was intimidating at first. But, looking back, I thoroughly enjoyed the idea of trying to solve the problem on my own," she adds.

Undergraduate Research Day

Another student with equal enthusiasm for undergraduate research is

Michael Pare. in fact, he was so inspired that last year he made the proposal to the Dean's Office for an Undergraduate Medical Student Research Day. The Faculty responded with equal enthusiasm and Research Day is scheduled for November 18. Basing his ideas on a successful program at McGill University, he says students who engage in research need a forum similar to that of a scientific meeting to present their work, because — as with all researchers — they must be able to present their findings to their peers.

Michael hopes Research Day, which he has organized with the help of Dr. Niall Byrne of the Division of Studies in Medical Education, will serve the dual purpose of helping student researchers improve their communications skills and expose their classmates, who have not engaged in research, to the vast number of opportunities and the excitement of research.

"Students get infected by other people's excitement and enthusiasm."

Having finished his second year of medical school and nearing the completion of his master's degree in neuroanatomy, Michael finds his research experience helpful many times when applied to problem solving in the clinical setting; gathering data, forming an hypothesis, testing and drawing conclusions. He says that because so much in the first years of medical school is sheer memory work, research provides a creative outlet and satisfies the desire to delve behind the knowledge conveyed in lectures.

Dr. Angel says that although the summer programs were designed to give students the opportunity to sample a research experience, there is also the hope that some students will be sufficiently excited about the scholarly aspect to pursue research as a lifelong goal.

Walking Between Bed and Bench

That said, it should come as no surprise that there is a group of medical students within the Faculty who plan to make their careers walking between bed, bench and classroom. It is an ambitious goal. Achieving it requires fascination with research, desire for patient contact and sufficient commitment to obtain both an M.D. and a Ph.D. degree.

Earlier this decade, the Faculty of Medicine, prompted in part by the declining number of academic physicians, began exploring the concept of a coordinated M.D./Ph.D. program. Prior to this, students interested in the dual degrees were required to complete each independently.

Dr. Mel Silverman

"Often a student would start a graduate degree and then by accident or design be accepted into Medicine but once they were caught up in medical school activities, they rarely went back to finish graduate school," explains Dr. Mel Silverman, Coordinator of the M.D./Ph.D. program. "All Faculty members realize that medical school can be the 'great leveler.'"

Dr. Silverman says that the Faculty felt it was necessary to develop a cohesive program that would attract exceptional students. Then once they were attracted, the Faculty had to ensure it facilitated their objectives of combining medical research in the clinical setting. When the program was initiated three years ago, it was envisioned that students would spend the first two years in medical school, then would break for two to three years to complete their Ph.D. and after that return to medical school for the final two years.

He explains that the goals of the program are to produce individuals who are fully conversant in clinical medicine and who are fully trained as researchers, with credibility at the graduate school level. This gives the students an incredible number of options for the future.

What motivates these students to take on what can only be described as a monumental commitment? Dr. Silverman says the serious applicants (they number about 20 per year, with two to three accepted into the program) want to do something beyond having a profession and see themselves making a contribution in medicine. He adds that the majority are working to their own personal agenda, so the program coordinator's role tends to be that of facilitator for their aspirations.

Combining Diverse Interests

Take for example Ellen Grant who,

after completing a four year undergraduate degree in Physics, was one of the first two students accepted into the M.D./Ph.D. program. Now after two years of medical school she spent the summer setting up her master's project in Physics in Dr. Charles Lumsden's lab. She is able to maintain the affiliation with the Faculty of Medicine during this because Dr. Lumsden holds appointments in both the Department of Medicine and the Department of Physics.

"... I thoroughly enjoyed the idea of trying to solve the problem on my own ..."

Ellen is particularly interested in neurology, and is planning to meld her background in physics with medical research on the brain. She explains, "Medical researchers have found many physiological processes show complicated behavior, displaying both pattern and disorder. This is especially true for brain processes and ion fluctuations in nerve membranes. Recently, physicists have devised mathematical models that describe this type of process, the most relevant being the 'strange attractors.' The term 'strange' refers to their complex mixture of pattern and disorder. Surprisingly, these 'strange attractors' can be compared to computers that change information from one form to another.

"In my research, I am studying strange attractors as basic physical models of information processing. This work may lead to new models of brain activity which will go beyond measurements of evoked potentials to address issues central to learning, thinking and memory. Strange attractors are a very new subject that connect theoretical physics to biology and medicine."

Ellen says that while she finds physics fascinating, she did not perceive a career in the lab as fulfilling enough. In applying to the M.D./Ph.D. program, it was a step towards combining research with patient contact. "At first, I was not sure if I had gone into medicine because it is more socially acceptable than physics, but with more exposure to medicine I know I made the decision for the right reasons."

In the case of Greg Hare, who began the program at the same time as Ellen, the motivation was similar but his background experience in research is quite different. He was accepted into medical school with two years of undergraduate experience, which as all seem to agree, does not allow for in-depth exposure to research. After his first and second years, he spent the summers researching in Dr. Dan Osmond's lab in the Department of Physiology.

"All Faculty members realize that medical school can be the 'great leveler.'"

"I never really expected to want anything to do with research, but I found I enjoyed the experience," he explains. "When Dr. Osmond suggested I apply to the program, I decided the ability to combine clinical practice and basic research would allow for a more fulfilling career in medical science."

Now in the third year of his Ph.D., he is attempting to clearly demonstrate the physiological role of prorenin activation to renin in plasma. He says one potential clinical application of the work could be in the regulation of hypertension dependent on renin production. If the effect can be regulated by blocking the production of renin from prorenin, it could be a useful tool in the management of hypertension.

"I decided to pursue this line of research because it would provide a sound background in basic science," he says. "I wondered initially if clinically-oriented research would have been more practical in the end, but now I am really glad of the basic training."

Dr. Silverman says that with these students there is the possibility of creating a completely integrated program tailored to whatever the students wants to try. For example, this year to keep up with their clinical skills while researching, both Greg and Ellen will spend one day per week in the Emergency at Toronto General Hospital. They will also participate in rounds; Ellen in Neurology and Greg in Nephrology.

In outlining other reasons for students to apply to the program, Dr. Silverman says there have been occasions when a student has been accepted into Graduate School and then realizes that their professional goals will be truncated without the medical degree. Or, it may be that the student's career development would be dramatically enhanced through the resources of a medical faculty as opposed to only interacting in the basic sciences.

This is borne out by the expe-

rience of Robyn Evans, who after completing two years towards her Ph.D. in biochemistry applied to the program, was accepted and has entered her second year of medical school. She says, "While I find basic research challenging, medical school offers a broader perspective on disease than as a basic scientist I would likely ever see. The contact with patients is another opportunity not easily accessed by basic scientists."

Working under the supervison of Dr. Marlan Packham in Biochemistry, Robyn is studying the surface properties of platelets and how they are related to their aging and certain disease states.

In summarizing the benefits of this to the Faculty, Dr. Silverman says having a pool of intellectually stimulating students raises the school's overall standards. "It also sends out a very important message to the rest of the world that the U. of T. has high enough standards of scholarship to attract these students."

"I never really expected to want anything to do with research ..."

He adds that these students are potentially a pool of staff for medical schools across Canada. "When we begin to look back 10 to 15 years from now at our graduates, quite a number of career investigatorship applications will be coming from these people."

From the students' perspective, Ellen probably gave the most apt summary when she says, "The program is really what you put into it. When you are one of the first people you can make it whatever you want it to be." ■

First Psychiatric Professor Replaced Fear with Caring

"We incarcerate these miserable creatures as if they were criminals in abandoned jails, near to the lairs of owls in barren canyons beyond the city gates, or in damp dungeons of prisons, where never a pitying look of a humanitarian penetrates; and we let them, in chains rot in their own excrement. Their fetters have eaten off the flesh of their bones, and their emaciated pale faces look expectantly toward the graves which will end their misery and cover up our shamefulness."

German physician, Johann Reil, writing in the early 19th Century about the treatment of the mentally ill

Persecuted as witches or demons in the Middle Ages, locked up and abandoned by more enlightened societies, the plight of the mentally ill resounds with appalling examples of misunderstanding and inhumanity. The attitude expressed by Johann Reil in the introduction did not gain support in the European medical community until the mid-19th century. Once embraced, of course, superstition and fear were quickly replaced with scientific study — the field of psychiatry.

In Canada and particularly in Toronto, psychiatric study is built on a foundation of sensitivity, caring and active community involvement. These are all characteristics embodied in the Faculty of Medicine's first Professor of Psychiatry, Dr. C.K. Clarke, for whom The Clarke Institute is named.

A graduate of this Faculty, Dr. Clarke's interest in the mentally ill was fostered through his association as an undergraduate with Joseph Workman, who is commonly considered the Father of Canadian Psychiatry. Appointed Superintendent of the Toronto Asylum for the Insane in 1854 (the facility was actually an abandoned jail that the City had graciously converted into a insane asylum), Workman spent more than two decades implementing ideas that were at least a century ahead of their time. Among them were the introduction of out-patient programs and the revolutionary practice of temporarily discharging patients to their family and friends. Workman was the leading psychiatric educator of his day, and of his many students, none would prove more gifted than Charles Kirk Clarke.

Locking Horns with Politicians

The son of a distinguished Speaker of the Ontario Legislature, Clarke was time and again frustrated by the action (or inaction) of politicians as he struggled to improve the lot of the mentally ill. Shortly after graduation from the University of Toronto, he was appointed assistant superintendent of an institution for the insane in Kingston, Ontario. He immediately set about implementing the treatments advocated by Dr. Workman, as far as his position would allow.

Three years later the superintendent was stabbed to death by a patient and Dr. Clarke was asked to take the helm. He accepted, he said, "in order to protect several hundred defenseless creatures from a political hireling who might be pitchforked into the position."

... of his many students, none would prove more gifted than Charles Kirk Clarke.

After firing the brutal and burly guards, Dr. Clarke initiated Canada's first training course for nurses to teach them the proper techniques in caring for the mentally ill.

He abolished the restraint of patients and the jail-like atmosphere in the wards and was a pioneer in the relatively new field of occupational therapy. He opened a brush factory with his patients that was so successful that local brush manufacturers forced him to close shop. Not to be deterred, he established an amateur band from among the same patients.

The clean, bright hospital-like atmosphere of the wards and new teaching and research projects that flourished under his administration soon attracted visitors and officials from around the world.

Changing Attitudes in Toronto

In 1905, Dr. Clarke returned to Toronto as Superintendent of the Toronto Asylum for the Insane. He quickly began the campaign for a fully-staffed institution which would combine patient care with a teaching function. He opened Canada's first psychiatric out-patient clinic in a house on the corner of Chestnut and Christopher Streets. He was also able to secure as Director a brilliant young English psychiatrist, Dr. Ernest Jones, who had trained under Freud and Alzheimer.

In 1908, three years after his arrival in Toronto, Dr. Clarke was appointed Dean of the Faculty of Medicine and, interestingly enough, was made the first Professor of Psychiatry. In this capacity, he was able to develop psychiatry as a respected and integral discipline within the medical curriculum.

A man of amazing energy and drive, Dr. Clarke was Medical Director and Commissioner of the Canadian National Committee for Mental Hygiene (later the Canadian Mental Health Association) from 1918 to his death; superintendent of the Toronto General Hospital from 1911-17; and medical director of the same institution until 1918. Meanwhile, during the same period of time he carried out responsibilities as Dean of Medicine until 1920 and Professor of Psychiatry until 1922.

In his 50 year career, Dr. Clarke was unyielding in his determination to improve the lot of the mentally ill and effect change in societal attitudes, despite hostility and opposition. Therefore, it must have given him considerable satisfaction to help to lay the cornerstone of Toronto's first psychiatric hospital at 2 Surrey Place in 1923. Not only was the facility the first one built specifically for that function, but it was also the first to be called 'hospital' rather than 'asylum.' Unfortunately Dr. Clarke died over a year before the hospital opened in 1925.

The attempts of friends and colleagues (spearheaded by Dr. J. C. FitzGerald) to have the building named after him were unsuccessful. That honor would wait 40 years until July 1966, with the opening of The Clarke Institute on College Street.

At Dr. Clarke's funeral held in Convocation Hall, University Chancellor Sir Edmund Walker called him, "one of the greatest men in psychiatry .. and one of the most unselfish men in his profession that I have ever known." Yet despite all the advances and improvements Dr. Clarke had achieved, the obituary writer at *The Globe* was still forced to add a line explaining what the field of psychiatry was.

Controversy Over the Use of Animals in Research Heats Up

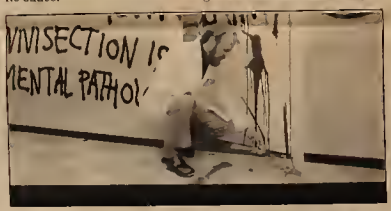
October, 1984 — A bomb explodes in a rear doorway leading into the Medical Sciences Building. There are no injuries and damage is minimal. Animal rights activists claim responsibility.

October, 1985 — The Faculty of Dentistry is broken into and vandalised. Ironically, no projects involving animals are disturbed, however hallways and classrooms are littered with debris and an expensive piece of lab equipment is damaged. Again, animal rights activists claim responsibility.

August, 1986 — The Municipality of Scarborough votes against a proposal from the Toronto Humane Society urging it to stop supplying unclaimed pound dogs to the University of Toronto for research. Scarborough is the second municipality to reject the proposal, Etobicoke having done so earlier in the Spring. North York has yet to decide.

This list of occurrences only skims the surface of the ongoing controversy surrounding the University's use of animals (specifically unclaimed dogs) in research. On one side is the Toronto Humane Society (T.H.S.), which is vehemently opposed to the use of pound animals in research. On the other side is the University which is equally adamant in its conviction that the use of animals in biomedical research within government prescribed guidelines is both moral and necessary. Somewhere in the middle lies the vast majority of the general public, who have yet to express an opinion one way or the other.

How is it that the quiet, staid University of Toronto found itself embroiled in what has sometimes been a vicious controversy? According to **Stephen Lindt**, Senior Media Relations Officer, in the past few years the T.H.S. has been taken over by a determined group of anti-vivisectionists. While it is not the only group in the City dedicated to preserving the rights of animals, it is the most highly-respected and well-funded. Lindt says that the T.H.S. has somewhere in the neighbourhood of $7-million at its disposal for advertising and promoting its cause.



As Lindt explains, the debate over pound animals goes on at several levels. "First are break-ins, which to us represent the biggest threat. Then, there are public demonstrations which do not focus directly on the University. Then, there is the quieter political debate carried on at the three levels of government."

> ***"If the public stands by and allows animal research to be banned, our research will be slowed tremendously ..."***

At the moment, the anti-vivisectionist movement is lobbying the federal government in an attempt to affect research funding to projects using animals. At the provincial level, the group is promoting a change in present legislation which would allow municipal pounds to refuse requisitions from researchers for unclaimed pound animals. Now, all pounds must legally comply with research requisitions.

Proposal to Municipalities

At the municipal level, T.H.S. approached the City Councils of Etobicoke, North York and Scarborough with the suggestion that unclaimed dogs, which normally would have gone to the University or its teaching hospitals, be sent to their facility on River Street. The T.H.S. claimed it would try to place these dogs with new owners. However, as Lindt points out, the T.H.S. is already euthanising an average of 1,500 dogs per year. Thus, it is unclear where additional dogs could be placed.

Lindt says that when the University heard of these approaches he and several researchers — notably **Dr. David Mock**, Chairman of the University's Animal Care Committee, **Dr. Elliot Phillipson**, respirologist at Toronto General Hospital and **Dr. Jim Kenyon**, Director of the Division of Laboratory Animal Services — made presentations to both the municipal animal care committees and the full city councils.

"Basically, we explained that the animals were an essential component of several major projects, particularly in cardiac, pacemaker and diabetes research. We described the stringent guidelines governing our researchers' use of animals and that in the majority of instances there is no pain or the pain is minimal. And, we pointed out where we felt the T.H.S.'s approach was misguided," Lindt explains.

In the cases of Etobicoke and Scarborough, the University's delegation was successful. The City of North York will make its decision later this Fall.

Improve Public Education

Dr. Mock believes that while the group has been successful to this degree, the University cannot afford to become complacent.

"We feel like we're arguing motherhood, so we tend to be less offensive and more defensive. The animal rights people are completely entitled to their beliefs. However, we are equally entitled and we will continue to argue our case."

He adds that the University's best defense is in making the public aware of significant medical advances made possible through animals. He cites as an example a change in procedure in lung transplant surgery which was perfected on dogs and used successfully on humans a month later.

"If the public stands by and allows animal research to be banned, our research will be slowed tremendously," he asserts.

Given that the controversy over using pound dogs is not likely to quickly end, the University is looking at the alternatives. It should be noted that the actual number of dogs used has dropped significantly from approximately 1,300 in 1981 to roughly 800 in 1985. Dr. Jim Kenyon attributes this to the difficulty in obtaining dogs and that researchers are using other "less attractive" animals whenever possible.

Exploring Other Possibilities

Over the past few years, the University has considered creating its own breeding colony to supply dogs. Yet, as Dr. Kenyon describes, the cost of underwriting this type of project runs into the millions of dollars. He says it may be possible to persuade the provincial government to take on the project on the behalf of all Ontario universities. Nothing, however, is imminent.

Another alternative to pound source dogs, that Dr. Kenyon is presently investigating, are Yucatan Miniature Pigs. These swine, native to Mexico, are essentially hairless, have very pliable skin, are odorless, and quite docile. As their name implies, they are very small. The average sow at maturity weighs less than 200 pounds. The averge weight of the conventional North American sow reaches 700 pounds.

Dr. Kenyon says that Yucatans look promising as research subjects. For close to a year, he has been gathering baseline data on the animals.

> ***... some significant changes in the present system can be expected.***

Meanwhile, the University has taken several important, additional steps in facing the problem. Under the encouragement of **Prof. David Nowlan**, Vice-President — Research, an ad hoc committee made up of representatives of both the lay and scientific community, has been created. The committee, chaired by **Prof. Barry Robinson**, Faculty of Pharmacy, will be charged with reviewing every angle of animal use, from moral and ethical considerations, to practical protocols and basic animal care.

Dr. Mock says that when the committee make its report early in the new year, some significant changes in the present system can be expected. ■

Research is a new department in TABLET created to highlight significant areas and people involved in projects around and within the Faculty of Medicine.

Faculty Research Shines Through Work of Nine MRC Scientists

The Medical Research Council Scientist awards are an interesting variation on the general awards theme. They are given to young researchers — more than four but less than eight years experience as independent investigators — who early in their careers have developed a reputation for excellence in research.

It is a telling comment on the calibre of young researchers in this Faculty when one considers that each year since 1983 when the awards were initiated at least one and often two or three awards are bestowed on Toronto-based researchers. And it is interesting to note that out of a possible ten appointments in each university, this faculty alone holds nine. The award provides research funding for five years. Investigators in any Canadian school of medicine, dentistry, pharmacy, nursing and veterinary medicine are eligible to apply.

In this issue of TABLET is the first of a two-part article featuring the nine Medical Research Council Scientists who are presently working in various Faculty departments. They are: Dr. R. Baker, Department of Medicine, Dr. J. Boggs, Department of Clinical Biochemistry, Dr. R. Gravel, Department of Medical Genetics, Dr. J. Greenblatt, Banting and Best Department of Medical Research, Dr. S. Grinstein, Department of Medical Biophysics, Dr. A. Jorgensen, Department of Anatomy, Dr. A. Klip, Department of Paediatrics, Dr. A. Slutsky, Department of Medicine, and Dr. M. Charlton, Department of Physiology.

Dr. Robert Baker, 40, is an Associate Professor in the Department of Medicine. A 1986 MRC award supports his investigations of lipids found in the membranes surrounding the nucleus of nerve cells.

... he became particularly interested in brain nerve cells and their membranes, since these transmit messages which comprise our thoughts and initiate our actions.

In his basic research, he uses centrifugation techniques to study the nuclei. Brain tissue is homogenized, thus breaking-up cells so the nucleus is separated from the endoplasmic reticulum. He further fractionates the nuclear pellet to obtain the portion consisting mainly of nerve cell nuclei.

Dr. Baker's university training began in 1965, when he entered U. of T.'s honors science program. After first year he started specializing in Life Science. Second and third year found him involved in the "Chemistry of Life." And, by final year he studied biochemistry as offered by the Faculty of Medicine.

In 1969 he entered U. of T.'s Graduate School in the Department of Biochemistry. His supervisor was Dr. Bill Thompson, a phospholipid investigator. Here Dr. Baker studied how fatty acids are introduced into phospholipids in the brain. At this point he become particularly interested in brain nerve cells and their membranes, since these transmit messages which comprise our thoughts and initiate our actions. He received his doctorate in 1973.

Dr. Baker further specialized in neurochemistry as a Centennial Fellow of the Medical Research Council. He spent two years at West Germany's Max Planck Institute for Biophysical Chemistry.

In 1975 he completed postdoctoral work at the Montreal Neurological Institute in Dr. Leon Wolfe's laboratory. Here he studied brain tissue of patients dying of Batten's disease.

In 1976 he became Assistant Professor of Neurology at U. of T. In 1977 he became a Scholar and in 1984, a Scientist of the Medical Research Council.

Dr. Joan Boggs, 40, received her MRC award in 1985. It enables her to continue work on the investigation and treatment of Multiple Sclerosis (MS). She is Associate Professor in the Department of Clinical Biochemistry at the Hospital for Sick Children and University of Toronto.

Dr. Boggs says much basic research is needed in MS since little is known about this disease.

Her main concern is uncovering information relating to the cause and treatment of the disease. In MS, lymphocytes (cells from the immune system) attack and destroy the myelin membrane which forms a sheath surrounding nerves. In healthy circumstances those lymphocytes would attack only foreign or abnormal proteins and cells called antigens.

... much basic research is needed in MS since little is known about the disease.

Dr. Boggs is trying to identify the antigenic substance responsible for MS. She is using an animal model to develop a method to kill specifically only those lymphocytes which are destroying myelin. Her research could potentially benefit both MS patients as well as those suffering from other autoimmune diseases.

Dr. Boggs was determined to become a scientist from age nine, when she learned the scientific method — to observe, to hypothesize, to test by experimentation and to draw conclusions.

Throughout her education, Dr. Boggs has been fortunate in obtaining scholarships and bursaries as needed. She did her undergraduate work in chemistry at Reed College in Portland, Oregon. She earned her M.Sc. in chemistry at the University of Toronto and then transferred to the Pharmacology department where she earned her Ph.D. Her graduate school and post-doctoral work was assisted by an MRC fellowship. She has also be awarded a Career Development Award from the Multiple Sclerosis Society.

Dr. Roy Gravel, 39, is a geneticist at the Hospital for Sick Children with a cross-appointment to the Faculty's Department of Medical Genetics. He has held an MRC Scientist Award since 1983, which allows him to work full-time on the genetic control of metabolism. He investigates the nature of genetic defects in inherited metabolic diseases. He explains that affected infants are born with a block in a biochemical pathway that can be lethal in some cases, or leave the child severely mentally retarded. These diseases are usually caused by a defect or complete absence of an enzyme. Examples are Tay-Sachs disease and propionicacidemia.

Dr. Gravel's research is part of a joint effort with two other Toronto scientists, Dr. Don Mahuran at HSC and Dr. Huntington Willard in the Faculty of Medicine. Their labs have isolated the genes for several inherited diseases, including two genes involved in different forms of Tay-Sachs disease. Dr. Gravel says these genes can be used to determine how enzymes are regulated and affect metabolism, as well as to determine the nature of mutation causing the disease. Dr. Gravel points out that the isolation of gene probes, covering hundreds of inherited diseases that are known, will be important in the future, not only to teach us what causes these disorders, but for use in carrier detection, prenatal diagnosis, and even gene therapy.

His interest in genetics was sparked by high school genetics lessons during biology classes.

Dr. Gravel did his undergraduate work and his master's at McGill University and his doctorate at Yale University on metabolism in lungi. He received an MRG Fellowship to study human genetics as a post-doctoral fellow also at Yale.

... Interest in genetics was sparked by high school genetics lessons ...

He came to Toronto in 1974, where he began as an assistant professor at HSC and the Faculty of Medicine. Currently, he is an associate professor in the Genetics Department at HSG and holds cross-appointments to both the Departments of Medical Biophysics and Medical Genetics in the Faculty of Medicine.

Dr. Jack Greenblatt, 40, uses his 1984 MRC award for studies on the regulation of gene expression. Associated with the University of Toronto since 1977, Dr. Greenblatt is a professor in the Banting and Best Department of Medical Research, as well as a professor in the Departments of Medical Biophysics and Medical Genetics.

He believes an understanding of the fundamentals of gene regulation will advance our understanding of cancer. And, he is seeking to determine how various human nuclear proteins, in some cases coded for by oncogenes, influence initiation of transcription by human RNA polymerase II.

Dr. Greenblatt expects experiments which define cancer as a molecular process will help us prevent, diagnose or treat the disease.

Dr. Greenblatt received an honors degree in physics from McGill University. As a first year graduate student at Harvard University, he discovered and became enthused by molecular biology. He has been a molecular biologist since then, although his Ph.D. is in Medical Biophysics. For this he worked in the laboratory of Dr. Walter Gilbert, where he succeeded in isolating "activator" and "antiterminator" proteins that turn genes on. In 1983 he received the Ayerst Award of the Canadian Biochemical Society for his research on the regulation of gene expression.

Dr. Greenblatt describes the system that initiates transcription of human genes as being terribly complex, with four to six initiation factors involved for any single gene. His laboratory has recently succeeded in cloning the human gene that codes for one of them. With further study, he is hoping to change our knowledge of human gene regulation from a philosophical concept into a workable chemical model.

... he is hoping to change our knowledge of human gene regulation from philosophical concept into a workable chemical pathway.

tablet talk

Announcements

■ A **Joint Planning Committee** has been established to serve as a vehicle for joint strategic planning between the Faculty of Medicine and the teaching hospitals. The committee, chaired by **Dean Lowy**, is made up of **Dr. J.T. Marotto**, Associate Dean — Clinical and Institutional Affairs, **Dr. B. Langer**, Professor and Chairman of the Department of Surgery, **Dr. W.J. Hannah**, Professor and Chairman of the Department of Obstetrics and Gynaecology, **Mr. W.V. Stoughton**, President of Toronto General Hospital, **Sister Christine Gaudet**, Chief Executive Officer of St. Michael's Hospital, and **Mr. D. Martin**, President of The Hospital for Sick Children. The first issue being considered by the committee is the potential relocation of the Princess Margaret and Wellesley Hospitals.

■ The Dean has established the **Dean's Strategic Planning Committee** to advise him on strategic issues facing the Faculty. This committee is made up of Associate Deans **G.H. Anderson** (Research), **J.T. Marotta** (Clinical and Institutional Affairs) and **E. Sellers** (Academic Affairs) and the following chairmen: **Dr. P. Alberti** (Otolaryngology), **Dr. M.J. Ashley** (Preventive Medicine and Biostatistics), **Dr. M.J. Hollenberg** (Anatomy), **Dr. B. Langer** (Surgery), and **Dr. G.N. Burrow** (Medicine). One of the first tasks of this committee is to establish a long-range strategic plan for the Faculty, which will be developed with extensive consultation throughout the Faculty.

■ As a result of CARE Canada's reopening of its University of Makerere, in Kampala, Uganda, **Dr. Charles Godfrey** at the Wellesley Hospital is interested in recruiting physicians for short-term teaching posts in Uganda. Dr. Godfrey has been instrumental in renewing the Faculty of Medicine's ties with that university. The teaching positions will last from two weeks to three months and emphasis is placed on primary health care approaches. For more information, Dr. Godfrey can be contacted at 926-7621.

■ **New Alumni Association Presidents**
The following people have taken on the presidency of their respective alumni associations: **Dr. I. Gollish**, Medicine; **Ms P. Mador**, Physiotherapy and Occupational Therapy; **Mrs. B. Lynde**, Household Science and Nutrition; **Dr. G. Martin**, Community Health; **Ms E. Kent**, Health Administration; **Ms J. Gorman**, Speech Pathology.

■ **Student Society Presidents**
The following list of students are the presidents of their various societies and will represent their peers to the Faculty and Medical Society: **Mark Kravis**, Medical Society; **Salvatore Spadafora**, 1st Year Medicine; **David Hughs**, 2nd Year Medicine; **Ian Cowan**, 3rd Year Medicine; **Mark Preece**, 4th Year Medicine; **Ellen Sanderson**, Physiotherapy and Occupational Therapy; **Lydia Sholten**, 1st Year Speech Pathology; **Lisa Azzola**, 2nd Year Speech Pathology; **Anne Peterson**, Community Health; **Patricia Yianchula**, Nutrition; **Mike McLennan**, Graduate Student Society (GOFAM); **Ben Chan**, SAC Representative; **Sandeep Aggarwal**, SAC Representative.

Appointments

■ **Dr. H. Griffiths** is the new Chief of Radiology at Toronto General Hospital.

■ **Dr. W. Hannah** will remain as Chief of Obstetrics and Gynaecology at Women's College Hospital.

■ **Dr. P. Tepperman** is the new Chief of Rehabilitation Medicine at the Sunnybrook Medical Centre.

■ **Dr. J.R. Fleming**, former Chief of Neurosurgery at the Toronto Western Hospital, has been appointed to the newly created position of Assistant Dean — Undergraduate Medical Curriculum.

■ **Prof. R.O.F. Bradshaw** who has been the Director of the Division of Physiotherapy since 1967 has retired from this position. **Prof. P. Faris** is the Acting Director of the Division for 1986-87.

■ Two new planning officers have been appointed to assist the Dean's Office in planning activities within the Faculty and with the teaching hospitals. **Ms Susan Law** is the Assistant in the Planning Directorate and will provide support to the new planning committees as well as working with departments on planning and review activities. **Ms Jane Magnan** is the Administrative Planning Officer in the Academic Affairs Office and will be responsible for development and implementation of a faculty development program in educational methods as well as developing a systematic program of course evaluation for all academic programs.

■ Wellesley Hospital has a new Chairman of its Board of Directors. **Mr. C. William Daniel**, former President and Chief Executive Officer of Shell Canada Limited, succeeds **Mr. Edmund C. Bovey**.

who served as Chairman of the Hospital's Board for the past five years.

■ Dr. Stuart Macleod, formerly of the Departments of Paediatrics, Pharmacology, Medicine and Clinical Biochemistry, has been appointed Dean of Health Sciences at McMaster University starting Jan. 1, 1987.

■ Dr. Robert Haslam has been appointed Chairman of the Department of Paediatrics and Chief of Paediatrics at The Hospital for Sick Children, effective at the beginning of July. Dr. Haslam comes to Toronto from Calgary where he served as professor and chairman of Paediatrics and Clinical Neurosciences at the University of Calgary Medical School, medical chief of staff at the Alberta Children's Hospital, director of the Department of Paediatrics at Foothills Hospital and director of the Alberta Children's Hospital Research Centre.

■ Also effective at the first of July was the appointment of

Dr. Harold Hoffman as the new head of Neurosurgery at The Hospital for Sick Children. Dr. Hoffman, who took over from Dr. E. Bruce Hendrick, is a graduate of the Faculty and joined the HSC as staff surgeon in the Division of Neurosurgery in 1964. Today he is a consultant in neurosurgery at the Hugh MacMillan Medical Centre, Sunnybrook Medical Centre and North York General Hospital.

■ Yet another Hospital for Sick Children appointment

was that of **Dr. Barry Smith** to the head of the Division of Neonatology at The Hospital for Sick Children.

Dr. Smith was associated with the Harvard University Medical School from 1980 until his new appointment. At Harvard he held the positions of chief of the Division of Newborn Medicine, Children's Hospital of Boston, paediatrician-in-chief at Brigham and Women's Hospital, head of Neonatology, Beth Israel Hospital.

■ Former graduate, Ms L. Wilson-Pauwels is acting Chairman of the Department of Art as Applied to Medicine for the 1986-87 school year.

■ Dr. M. Rauth is the acting Chairman of the Department of Medical Biophysics, succeeding Dr. R. Phillips, who completed his term as chairman and has moved to The Hospital for Sick Children's Research Institute.

Awards

■ Winners of the 1986 **Gairdner Foundation International Awards**, which recognize outstanding contributions in the field of medical science, were announced in June. Of the ten scientists to receive awards, five are Canadians (two from the University of Toronto), two are Swiss, two are American and one is Australian.

The winners from this Faculty were: **Dr. Harold Sonnenberg**, Department of Physiology, and **Dr. Aser Rothstein**, Research Institute at The Hospital for Sick Children.

Dr. Sonnenberg's award was given for his work with Drs. Adolfo J. de Bold and Thomas G. Flynn at Queen's, in discovering a hormone that originates in the heart and controls the excretion of salt and water by the kidney.

Dr. Rothstein's Wightman Award of the Gairdner Foundation is given, from time to time, to a Canadian who has shown outstanding leadership in Canadian medicine and medical science. Dr. Rothstein has contributed to Canadian medicine through his scientific discoveries, his leadership of The Hospital for Sick Children Research Institute and his influence on science policy and scientific standards.

The awards will be presented on October 24th by Dr. J. Fraser Mustard, President of The Canadian Institute for Advanced Research.

■ In recognition of the major contribution made by Mr. James McNab, former President of the North York General Hospital, to health care in the many communities in which he served, the Board of Governors at North York General together with the Faculty of Medicine have created the **James A. McNab Health Promotion Scholarship**. The award will be given to a graduate or undergraduate student at the University of Toronto who has demonstrated excellence or the potential for excellence in the area of health promotion.

■ **Dr. Katherine Siminovitch**, at Toronto Western Hospital and Assistant Professor in the Department of Medicine, has been presented with a $75,000 medical scholarship from the Canadian Life and Health Insurance Association. She was selected on the basis of her genetic research into causes of arthritis.

■ **Dr. Robert Filler**, surgeon-in-chief at The Hospital for Sick Children, is the first recipient of the Variety Club's International Sir James Carreras Medical Award, in recognition of his work as leader of the surgical team which separated two sets of Siamese twins. The award, named for the former world president of VCI, will be presented annually to a physician who has done outstanding work in paediatrics.

■ The three winners of the **W.T. Aikins Awards for Excellence in Undergraduate Medical Teaching** will be presented with their awards at the first Faculty Assembly on November 24th. For the second year, the Faculty is recognizing superior teaching with these awards. The awards emphasize the importance of excellence in individual teaching, as well as the need for innovation and development in education. The winners are:

Dr. Catherine Whiteside
Department of Medicine
— For Excellence In Individual Teaching Performance
The Faculty Undergraduate Awards Committee felt that Dr. Whiteside's demonstrated commitment to excellence in undergraduate teaching and her innovative approaches to clinical teaching when combined with her capabilities as a fundamental scientist and membrane biologist make her an ideal role model of the clinical scientist.

Dr. Ian Taylor
Department of Anatomy
— For Excellence In Course Coordination and Development
Dr. Taylor has moved the teaching of Anatomy and Embryology into modern times and for so doing received the W.T. Aikins Award. He was instrumental in revamping Anatomy to teach students how to think logically about the interrelated structures of the body, and to make the courses clinically relevant.

Dr. David Shaul
Department of Obstetrics and Gynecology
— For Excellence In Course Development and Coordination and Individual Teaching Performance
The importance of an Undergraduate Teaching Program in human sexuality has been long since accepted by our Faculty. Until Dr. Shaul's proposal was tabled in 1979, little had been accomplished to realize this goal. Two factors inhibited the realization of the program: a plan and a faculty member who could implement it with the right mixture of knowledge, sensitivity, openness and enthusiasm. Dr. Shaul came forward with an innovative plan and the right stuff.

■ **Dr. B. Cinader**, Department of Immunology, was awarded one of four Landsteiner Medals in recognition of his exceptional contributions to immunology at the very successful Sixth Annual Congress of Immunology in July. The Medal, designed by Toronto artist Dora de Pedery-Hunt depicts Nobel Prize winner Karl Landsteiner, an eminent scientist-physician, best known for his pioneering research in blood groups and immunochemistry.

UNDERGRADUATE MEDICAL STUDENT RESEARCH DAY
Medical Research: Let it capture your imagination!
Who: participants: All UNDERGRADUATE Medical Students at the University of Toronto who are engaged in Medical Research.
Audience: All interested in Medical Research
Where: The Alumni Lounge Medical Sciences Building
When: TUESDAY NOVEMBER 18 9:00 a.m. — 12:30 p.m.
Why: To celebrate the fun and excitement of Medical Research.
Medical Research: Let it capture your imagination!
For more information Call: Dr. N. Byrne or M. Paré at: 978-2051

Who's Who of Women In/And Medicine at the University of Toronto from 1883

1984 marked the centenary of the admission of women to the University of Toronto and the Faculty of Medicine. As part of this celebration, a history of women who have been associated with the Faculty as students, staff and faculty was begun, with the support of the Dean's Office.

The first edition of the Who's Who of Women In/and Medicine at the University of Toronto from 1883 is now available. To date, information has been collected on some 230 women who were associated with the initial establishment of the Women's Medical College at Toronto and Kingston in 1883, the formation of the Ontario Medical College for Women affiliated with the Trinity Medical School in Toronto in 1884, the establishment of the Women's College Hospital in 1906, and the re-establishment in 1904 of the co-educational Faculty of Medicine at the University of Toronto.

The Who's Who will be a valuable resource for anyone interested in the involvement of women in medicine and the health care system in Canada. It is hoped that additional contributions of information, photographs and other memorabilia will be submitted, so that subsequent editions can be expanded.

The Who's Who is available from the Dean's Office at a cost of $10.00. Copies may be ordered by completing the form and sending it to: Who's Who In/and Medicine c/o Planning Directorate, Room 2109, Medical Sciences Building, University of Toronto, 1 King's College Circle, Toronto, M5S 1A8.

Continuing Education Courses

Continuing Education Course Calendar
November, 1986 — April, 1987

Date/Location	Title/Fee	Of Interest To:
October 31, November 1-2, 1986 The Westin Hotel	Paediatric Trauma $250	Anaesthetists, Surgeons, Emergency Physicians, Paediatricians
November 6, 1986 Mount Sinai Hospital	Computers in Clinical Education and Practice $90	All Physicians and Clinical Teachers
November 7, 1986 Mount Sinai Hospital	Update on Digestive Diseases, 1986 $100	Internists, Surgeons, Family Physicians
November 12, 1986 Toronto General Hospital	2nd Annual Perinatal Day — Medical Disorders During Pregnancy $80	Obstetricians and Family Physicians
November 14, 1986 Women's College Hospital	Sexual Assault: A Comprehensive Approach to Care $60	Emergency Physicians, Family Physicians, Nurses, Social Workers, Occupational Therapists
November 21, 1986 Princess Margaret Hospital	Surgical Oncology 1986 $80	Surgeons, Family Physicians
November 21-22, 1986 Mount Sinai Hospital	Anaesthetic Practice 1986	Certified Anaesthetists in Non-Teaching Hospitals
November 26, 1986 Inn on the Park	Diabetes Update $60	Internists, Family Physicians, Nurses, Nutritionists, Pharmacists
December 1, 1986 Mount Sinai Hospital	2nd Annual Course: Infections in General Surgery $100	General Surgeons, Microbiologists, Infectious Disease Specialists, Pharmacists and Infection Control Nurses
December 5, 1986 Women's College Hospital	Infectious Diseases — Update 1986 $75	Family Physicians
January 27, 1987 Hospital for Sick Children	ENT Disease in Children	Paediatricians, Family Physicians, Otolaryngologists
February 5-6, 1987 Toronto General Hospital	Update '87 for Family Physicians	Family Physicians
March 16, 1987 Delta Mountain Inn Whistler, B.C.	Otolaryngology — Head and Neck Surgery Update $425	Otolaryngologists, General Surgeons, Plastic Surgeons
April 3, 1987 St. Michael's Hospital	Upper Extremity Update 1987	Surgeons, Physiotherapists
April 8-10, 1987 Hospital for Sick Children	Paediatric Update	Paediatricians, Family Physicians
April 11, 1987 Medical Sciences Bldg. University of Toronto	Brief Psychodynamic Psychotherapy — State of the Art $110	Psychiatrists, Psychologists, Social Workers, Residents
April 27-29, 1987 Mount Sinai Hospital	27th Annual Refresher Course for General Surgeons	General Surgeons

To register or for more information, call the Office of Continuing Education at: (416) 978-2718

Who's Who of Women In/And Medicine

Name: _____

Address: _____

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I enclose a cheque or money order payable to the University of Toronto for _____ copies @ $10.00 each for a total of $_____.